

GP-303376

TRAILER TONGUE LENGTH ESTIMATION USING A TRAILER YAW RATE SENSOR

ABSTRACT OF THE DISCLOSURE

A control system for estimating the tongue length of a trailer being towed by a vehicle in connection with a front wheel steering with or without coordinated rear wheel steering associated with the vehicle. The control system employs an algorithm that calculates an estimated trailer yaw rate based on a corrected tongue length, a front wheel steering angle, a rear wheel steering angle, vehicle speed and a vehicle yaw rate. The estimated trailer yaw rate is compared to a measured trailer yaw rate to generate a yaw rate error that is converted to a tongue length error. The tongue length error is compared to the estimated tongue length to become a corrected estimated tongue length for a next computation period. After a few seconds of processing, the corrected estimated tongue length will be the actual tongue length of the trailer.